Fraxinus pennsylvanica - Ulmus americana / Prunus virginiana Woodland

COMMON NAME	Green Ash – American Elm / Choke Cherry Woodland
SYNONYM	Green Ash - Elm Woody Draw
PHYSIOGNOMIC CLASS	Woodland (II)
PHYSIOGNOMIC SUBCLASS	Deciduous Woodland (II.B)
PHYSIOGNOMIC GROUP	Cold-deciduous woodland (II.B.2)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (II.B.2.N)
FORMATION	Cold-deciduous woodland (II.B.2.N.a)
ALLIANCE	FRAXINUS PENNSYLVANICA - (ULMUS AMERICANA) WOODLAND ALLIANCE

CLASSFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Terrestrial

RANGE

Theodore Roosevelt National Park

This woodland is common throughout Theodore Roosevelt NP where it is usually associated with upland draws and drainages, and moderately steep north and northeast facing slopes.

Globally

This community is reported from Montana, North Dakota, and South Dakota; it is found in four sections of two ecoregion provinces.

ENVIRONMENTAL DESCRIPTION

Theodore Roosevelt National Park

Green ash - American elm woodlands are common along upland drainages where they are often found in long, narrow draws. These woodlands can also be found on moderately steep north and northeast facing slopes in close association with *Juniperus scopulorum.* Soils in the draws are generally well developed in the toeslopes and north-facing backslopes (Butler 1983). Soils on south-facing backslopes tend to be dry, shallow, and much less vegetated. These woodlands provide important habitat for a wide variety of wildlife species.

Globally

In western South Dakota and North Dakota, this community occurs in upland ravines and broad valleys or on moderately steep slopes. It also occurs along small permanent or ephemeral streams. In central North Dakota, this community is also found along the north slopes of end moraines or kames and along lakeshores (Williams 1979 and Godfread 1976). On these sites, soil and topography permit greater than normal moisture conditions. In south-central South Dakota this community occurs on steep, north-facing escarpments and around boulder outcrops. In the western Dakotas soils are clay loams, sandy clay loam, silty clay, and sandy loam. Soil pH ranges from 6.3 to 7.5 in South Dakota, while soils in North Dakota have pH of 6.0-8.1. Slopes range from 0 to 40 percent. In south-central South Dakota soils are dry to moist, and moderately drained (Hansen and Hoffman 1988, Girard *et al*. 1989).

MOST ABUNDANT SPECIES

Theodore Roosevelt National Park

Stratum	Species
Tree Canopy	*Fraxinus pennsylvanica, Ulmus americana, Acer negundo*
Short Shrub	*Prunus virginiana, Symphoricarpos occidentalis, Rosa woodsii*
Herbaceous	*Poa pratensis, Carex sprengelii, Galium boreale*

Globally

Stratum	Species
Tree canopy	*Fraxinus pennsylvanica*
Tall shrub	*Prunus virginiana*
Graminoid	*Carex sprengelii*

CHARACTERISTIC SPECIES

Theodore Roosevelt National Park

Fraxinus pennsylvanica, Ulmus americana, Acer negundo, Prunus virginiana, Symphoricarpos occidentalis, Rosa woodsii, Poa pratensis, Carex sprengelii, Galium boreale

Globally

Fraxinus pennsylvanica, Prunus virginiana

VEGETATION DESCRIPTION

Theodore Roosevelt National Park

Fraxinus pennsylvanica is the dominant tree species (30% mean foliar cover) with *Ulmus americana* (12% mean foliar cover) and *Acer negundo* (3% mean foliar cover) as secondary species. *Prunus virginiana* is the most common shrub along the shrubby border between the woodland and the associated grassland on the footslope, which is usually in the *Pascopyrum smithii* Herbaceous Alliance. *Shepherdia argentea* sometimes forms a border between woodland and grassland communities along the upper slopes and shoulders on north and east facing draws. Further, the *Calamovilfa longifolia* Herbaceous Alliance and *Schizachyrium scoparium – Bouteloua curtipendula* Herbaceous alliances, usually found on the shoulders of the slopes, often form the boundary between this alliance and the upland grasslands such as the *Stipa comata – Bouteloua gracilis* Herbaceous Alliance. Other common shrubs associated with green ash draws include *Rosa woodsii*, *Rhus trilobata*, and *Amelanchier alnifolia*. Mean foliar cover for the herbaceous layer is about 45% with *Poa pratensis*, *Carex sprengelii*, and *Galium boreale* as the most common species.

Globally

This community is an open to closed canopy woodland dominated by *Fraxinus pennsylvanica. Ulmus americana* sometimes achieves codominance. The largest trees are 50 to 60 cm dbh, but most trees are 20 to 30 cm dbh. In sharply cut, V-shaped upland ravines, the largest trees are near the center or bottom of the ravine where there is greater soil moisture. The average tree age is 70 to 80 years. In undisturbed stands, the understory is composed of two layers. The taller and more conspicuous layer is a shrub layer 2 to 3 m tall. This layer is dominated by *Prunus virginiana* with smaller amounts of *Symphoricarpos occidentalis*. The lower layer is dominated by grasses and sedges such as *Elymus virginicus* and *Carex sprengelii*. Common herbaceous species include *Galium boreale, G. aparine*, and *Maianthemum stellatum*. In central South Dakota this community is a woodland with an open canopy of ash trees and an extremely dense shrubby understory. The average tree height is 6.7 m and the shrub understory is 1.6 m high. There are few herbaceous species (U.S. Army Corp of Engineers 1979). The continuation of the status of *Ulmus americana* as a prominent part of this community is uncertain due to the effects of Dutch Elm disease (Hansen *et al*. 1984, Hansen and Hoffman 1988, Girard *et al*. 1989, Hansen *et al*. 1990).

CONSERVATION RANK G2G3. There are probably fewer than 100 occurrences of this community rangewide. It is reported from Montana (where it is ranked S1Q), North Dakota (SU), and South Dakota (SU). Currently 41 occurrences are documented from North Dakota. Historical acreage and trends are unknown.

DATABASE CODE CEGL000643

SIMILAR ASSOCIATIONS

Acer negundo / Prunus virginiana Forest (may represent a disturbed variant of this type)

Fraxinus pennsylvanica - Ulmus americana / Symphoricarpos occidentalis Forest (may resemble stands which are overgrazed (Girard et al. 1989).)

Fraxinus pennsylvanica / Prunus virginiana Forest

COMMENTS

In Theodore Roosevelt National Park, cattle grazing was common in these stands, as is true elsewhere in the range of this type. In Theodore Roosevelt National Park, bison utilize this habitat for grazing, watering, and summer-time shade (Hansen *et al*. 1984). Past heavy grazing by cattle is reflected in the dominance of some weedy species, such as *Melilotus officinalis, Melilotus alba,* and *Poa pratensis* (Hansen *et al*. 1984).

REFERENCES

Butler, J.L. 1983. Grazing and topographic influences on selected green ash (*Fraxinus pennsylvanica*) communities in the North Dakota Badlands. M.S. Thesis. North Dakota State University. 126pp.

Daubenmire, R. and J.B. Daubenmire. 1968. Forest vegetation of eastern Washington and northern Idaho. Washington Agricultural Experiment Station, Technical Bulletin 60.

Daubenmire, R.F. 1970. Steppe vegetation of Washington. Washington State University Agricultural Experiment Station Technical Bulletin No. 62. 131 pp.

Girard, M.M., H. Goetz, and A.J. Bjugstad. 1989. Native woodland habitat types of southwestern North Dakota. Research Paper RM-281. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. 36 p.

Godfread, C. 1994. The vegetation of the Little Missouri Badlands of North Dakota. In Proceedings of the Leafy Spurge Strategic Planning Workshop, March 29-30, Dickinson, ND. Pp 17-24.

Godfread, C.S. 1976. Vascular flora of Barnes and Stutsman Counties, North Dakota. Ph.D. thesis. North Dakota State University, Fargo. 225 p.

Hansen, P.L., G.R. Hoffman, and A.J. Bjugstad. 1984. The vegetation of Theodore Roosevelt National Park, North Dakota: A habitat type classification. U. S. Dep. Agric., For. Serv., Rocky Mt. For. and Range Exp. Sta., Gen. Tech. Rep. RM-113. Fort Collins, Colo. 35 p.

Hansen, P.L., G.R. Hoffman, and G.A. Steinauer. 1985. Upland forest and woodland habitat types of the Missouri Plateau, Great Plains Province. In: Noble, D.L.; Winokur, R.P., eds. Wooded draws: characteristics and values for the northern Great Plains: Proceedings of the symposium; 1984 June 12-13; Rapid City, SD: South Dakota School of Mines and Technology: 15-26.

Hansen, P.L., K. Bogs, R.Pfister, and J. Joy. 1990. Classification and management of riparian and wetland sites in central and eastern Montana (Draft version 2). Montana Riparian Association, Montana Forest and Conservation Experiment Station, School of Forestry. University of Montana, Missoula, MT. 279 p.

Hansen, P.L. and G.R. Hoffman. 1988. The vegetation of the Grand River/Cedar River, Sioux, and Ashland Districts of the Custer National Forest: a habitat type classification. USDA Forest Service General Technical Report RM-157, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.

Mack, S.E. 1981. Hardwood ravines and associated vegetation in west-central North Dakota. M.S. thesis. North Dakota State University, Fargo. 168 p.

Montana Natural Heritage Program. No Date. Unpublished data on file. Helena, Montana.

U.S. Army Corps of Engineers. 1979. A cultural resources reconnaissance of the federal lands on the east bank of Lake Francis Case, South Dakota. U.S. Army Engineer District, Corps of Engineers, Omaha, NE.

Wali, M.K., K.T. Killingbeck, R.H. Bares, and L.E. Shubert. 1980. Vegetation-environment relationships of woodland and shrub communities, and soil algae in western North Dakota. Report of a project of the North Dakota Regional Environmental Assessment Program. ND REAP Project No. 7-01-1. Department of Biology, University of North Dakota, Grand Forks, ND.

Williams, R.P. 1979. Vascular flora of south central North Dakota. PhD Thesis, NDSU, Fargo.